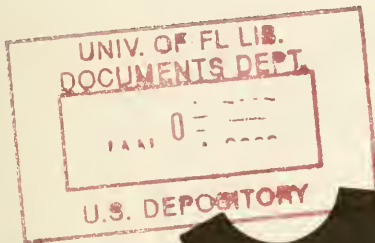


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Be Safe from Insects in Recreation Areas



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On January 24, 1978, four USDA agencies—Agricultural Research Service (ARS), Cooperative State Research Service (CSRS), Extension Service (ES), and the National Agricultural Library (NAL)—merged to become a new organization, the Science and Education Administration (SEA), U.S. Department of Agriculture.

This publication was prepared by the Science and Education Administration's Federal Research staff, which was formerly the Agricultural Research Service.

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BE SAFE FROM INSECTS IN RECREATION AREAS

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Insect pests can spoil a hike, picnic, camping trip, or other outdoor activity—unless you take measures to protect yourself against them. In this bulletin, you'll find information on repellents, space sprays, and other methods you can use to help prevent insect annoyance.

REPELLENTS

Repellents are effective in varying degrees against mosquitoes, biting flies, gnats, chiggers, fleas, and ticks. They are not effective against wasps, spiders, and scorpions.

Whenever you use a repellent, be sure to follow the directions carefully and heed all precautions on the label. Follow the same precautions as for pesticides, page 6.

Materials To Use

Materials used as repellents fall into two general categories: general-use repellents, which may be applied to both skin and clothing; and repellents that may be applied to clothing only.

General-use repellents contain at least one of the following active ingredients: deet, ethyl hexanediol, dimethyl phthalate, dimethyl carbate, or Indalone. They are available under various brand names, and the ingredients are listed on the label. When deet is an ingredient, it is sometimes listed under its chemical name, N,N-diethyl-*m*-toluamide.

You can purchase full-strength ethyl hexanediol and dimethyl phthalate, and a 50-percent solution of deet in alcohol from your local druggist or supermarket. Indalone is not widely available.

These repellents are also available in lower concentrations in liquid form, in pressurized cans and ordinary bottles. Some may be purchased as foams in pressurized cans. If you choose a liquid in a pressurized can, the repellent will be easier to apply if the container gives a coarse spray rather than a fine spray.

Deet is the best repellent to use for protection against most insects. It is very effective for most people. However, the effectiveness of any repellent varies from person to person. Deet repels more kinds of biting insects, ticks, and mites than other repellents.

¹ Retired.

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The general-use repellents lose their effectiveness when the surface to which they are applied becomes wet or is washed.

Although general-use repellents are safe to use on your skin, as directed, you should never take them internally.

Benzyl benzoate may be applied to your clothing *only*, to control some kinds of insects. It is generally available from local drug-gists. Never apply benzyl benzoate to your skin.

Repellents dissolve or stain some kinds of paints and plastics—for example, plastic lenses of glasses, fingernail polish, synthetic hairpieces, painted or varnished surfaces (such as an automobile body), and some kinds of rayon fabric. Plastic fountain pens and plastic watch crystals are particularly subject to damage. Of the general-use repellents, dimethyl phthalate is usually the most damaging. Ethyl hexanediol and deet cause less damage to painted surfaces than the other repellents, and usually cause no appreciable damage to most plastics.

Repellents will not damage nylon, polyester, acrylic, all-cotton, or all-wool cloth, but may cause temporary stains.

How To Apply

For mosquitoes, biting flies, and gnats.

You can apply any of the general-use repellents listed on page 3 for protection against mosquitoes, biting flies, and gnats.

Application to skin.—To protect your skin, shake or spray a few drops of repellent from the bottle or pressurized can onto your

palms, and rub them together. Apply the repellent thoroughly to the backs of your hands and to your wrists, neck, ears, face, and other exposed skin, as if you were washing yourself; do not apply it close to your eyes or lips. To help prevent the repellent from getting in your eyes, do not apply too much of it on your forehead.

Use enough repellent to make an even film over your skin; the insects will quickly find and bite untreated spots.

Repellent is easier to apply if you spray it directly from a pressurized can onto your skin and clothing; however, you are more likely to waste the repellent, and it is apt to come in contact with materials that are susceptible to damage.

If you get the repellent on the mucous membranes, or on tender skin, such as that on the eyelids, it will cause stinging. If the repellent gets in your eyes, it will cause severe but temporary stinging.

Most repellents feel greasy on the skin. Treated skin sometimes feels warm for a few minutes after you apply the repellent. This is normal and only temporary.

This treatment will give protection for 2 or more hours.

Application to clothing.—To apply repellent to your clothing, shake or spray about a dozen drops onto your palms, rub your palms together, and rub lightly on your socks, shirt, trousers, or other outer clothing. Or, if you prefer, apply a light spray to areas of your clothing through which the insects bite. This treatment will give protection for several days, unless the clothing is washed or dipped in water.

For chiggers

To protect yourself against chiggers, apply repellent to your clothing and to exposed skin on your arms and legs. The repellent does more than keep chiggers from biting; it kills them.

Barrier method.—The simplest way to apply repellent for chiggers is in a spray that contains a general-use repellent.

You can protect yourself from chiggers by spraying the repellent on the top of your socks, and on the bottom of your trousers. This treatment is effective only if there are no high weeds, or if you are not sitting or lying on the ground, or sitting on a log.

Otherwise, apply the repellent to your arms and legs, if they are not covered, and to all openings in your clothing—those that are buttoned, zippered, or otherwise fastened; the cuffs and waistband of trousers or slacks; the cuffs (or armholes) and neckband of blouses or shirts; the hem and waistband of skirts; the neckline, hem, and cuffs, sleeve hems, or armholes of dresses; and on your socks or stockings, both above and below the tops of your shoes.

For fleas

Deet is the most effective repellent to use against fleas. Apply it to exposed skin, as for mosquitoes (p. 4), and to your clothing by the spraying method (p. 4). Deet remains effective on clothing for a week or more.

You can also protect yourself against fleas if you smear or spray deet on your socks and the legs of your trousers.

For ticks

The following repellents are the best ones to use against ticks, in the order of decreasing effectiveness: Indalone, deet, dimethyl carbate, and dimethyl phthalate. You may apply them to your clothing, as you do for mosquitoes (p. 4). None of these repellents provides complete protection against ticks.

SPACE SPRAYS

You can reduce the number of flies, mosquitoes, and gnats in the air if you use an insecticide space spray. Some of these sprays come in ready-to-use pressurized cans. Others must be applied with a hand sprayer that produces a fine mist.

Space sprays usually remain effective for at least 30 minutes, and, if the insects are not migrating, effectiveness may last as long as several hours.

Space sprays are clearly labeled for use against *flying insects*. Follow the directions and heed all precautions on the labels.

To use a space spray inside a tent, automobile, or trailer, spray for only a few seconds.

To treat a small outdoor area, such as a small yard or picnic spot, apply the spray upwind of the site. As you apply it, walk slowly across the upwind side of the area you wish to treat. If you use a pressurized can, hold it upright and as close to the ground as possible; if you use a hand sprayer, hold it about 3 feet above the ground. Cover food, drinking water, and cooking and eating utensils before you apply a spray to prevent them from becoming contaminated. Do not apply a space spray directly onto trees, shrubs, and other desir-

able plants; sprays contain oil, which can damage the plants. Never apply insecticide to your skin or clothing.

USE OF PESTICIDES

This publication is intended for nationwide distribution. Pesticides are registered by the Environmental Protection Agency (EPA) for countrywide use unless otherwise indicated on the label.

The use of pesticides is governed by the provisions of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended. This act is administered by EPA. According to the provisions of the act, "It shall be unlawful for any person to use any registered pesticide in a manner inconsistent with its labeling." (Section 12(a)(2)(G))

EPA has interpreted this section of the act to require that the intended use of the pesticide must be on the label of the pesticide being used or covered by a Pesticide Enforcement Policy Statement (PEPS) issued by EPA.

The optimum use of pesticides, both as to rate and frequency, may vary in different sections of the country. Users of this publication may also wish to consult their Cooperative Extension Service, State agricultural experiment stations, or county extension agents for information applicable to their localities.

The pesticides mentioned in this publication are available in several different formulations that contain varying amounts of active ingredients. Because of this difference, the rates given in this publication refer to the amount of active ingredient, unless otherwise

indicated. Users are reminded to convert the rate in the publication to the strength of the pesticide actually being used. For example, 1 pound of active ingredient equals 2 pounds of a 50 percent formulation.

The user is cautioned to read and follow all directions and precautions given on the label of the pesticide formulation being used.

Federal and State regulations require registration numbers. Use only pesticides that carry one of these registration numbers.

USDA publications that contain suggestions for the use of pesticides are normally revised at 2-year intervals. If your copy is more than 2 years old, contact your Cooperative Extension Service to determine the latest pesticide recommendations. The pesticides mentioned in this publication were federally registered for the use indicated as of the issue of this publication. The user is cautioned to determine the directions on the label or labeling prior to use of the pesticide.

OTHER METHODS

Do not overlook mechanical methods of protecting yourself from insects. When you are camping, make sure all of the windows in your tent are screened. Use a bed net if you are sleeping in the open. To keep scorpions or spiders out of your tent, make sure the floor is tightly fastened to the sides.

Where ticks are a problem, wear slacks or long trousers and tuck them into the tops of your socks or boots.

To keep insects from landing on food, cover open food dishes with a small fine-mesh net.

Practice sanitation. A clean campsite or picnic area is less likely to attract most kinds of insects than a littered area.

Before you pitch a tent, clear the area of dead leaves, twigs, and loose stones. If possible, do not camp near rockpiles or fallen trees; scorpions and spiders often hide in such places. In areas where scorpions are a problem, look for them inside your shoes before you put your shoes on each morning.

There is little you can do to get rid of yellow jackets that come around when you are picnicking—except move to another area. On your own property, you may spray their nests with insecticide, but on public or private park land this should be done only by a ranger or other responsible person.

If you are bitten . . .

If you are in an area where there are many insects, you are likely to receive a few bites, even if you protect yourself with insect repellent or a space spray. If you are bitten, do not scratch the bites; this can break the skin and invite infection.

After you have been in an area infested by chiggers, take a hot soapy bath as soon as possible. If you can do this within an hour, you can kill most of the chiggers before they attach themselves to your skin.

Sunburn relief products and other local anesthetics that contain benzocaine (ethyl aminobenzoate) can help alleviate itching and mild pain. They are available in drug stores as ointments and pressurized sprays. It is a good idea to include one in a first aid kit for

camping and other outdoor activities.

Although most insect bites are annoying, cause itching, or are moderately painful, some can even cause serious illness and severe allergic reactions in certain sensitive people. If you feel dizzy, nauseated, or feverish after having been bitten by an insect, or if intense pain lasts more than a few seconds, get medical attention as soon as possible. Consult your doctor if you have ever experienced an allergic reaction following an insect bite.

FOR MORE INFORMATION

You will find detailed information on control of some of the insect pests discussed in this bulletin in the following publications:

- HG 121, "Controlling Fleas";
- HG 122, "Controlling Wasps";
- HG 137, "Controlling Chiggers."

To obtain single free copies, send your request on a postcard to: Office of Governmental and Public Affairs, U.S. Department of Agriculture, Washington, D.C. 20250. Please include your ZIP code number in your return address.

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